

Socio-ecological management in the San Antonio Bay MPA, Argentina

SUMMARY

In the area of the San Antonio Marine Protected Area (MPA), there are big issues that make this MPA a ‘paper MPA’. To resolve these issues, solutions need to be tailored to local beliefs and customs. There is a lag between specialization and communication, which widens the gap between academics like myself and non-specialists.

This project bridges that gap by combining marine biodiversity, social data and new forms of scientific communication. I did this through an interview-based classification system that I developed myself, which deeps into the concerns and perceptions of different people that live in this coastal area, San Antonio Marine Protected Area. The honest conversations and interviews led to a genuine and respectful documentary, among other outcomes.

The area at hand experiences various environmental problems, including run-off from abandoned mining, fish meal factories and unregulated fishing. It also boasts the supposedly most “beautiful beach” in Argentina. This project explores this contrast, the people in-between it and novel and impactful ways to start a conversation in the small community living around the MPA.

TIME

Research of the case study: 20th January 2021 – 15th October 2021

Ethics paperwork and fieldwork logistics: 1st April 2021 – 20th December 2021

Fieldwork in Patagonia: 2nd January – 15th February 2022

Analysis and postproduction of documentary: 15th February – 15th July 2022

Outreach activities: 1st August 2022 – March 2023

PROJECT IMPLEMENTATION

The project idea started as part of my doctoral studies. During my PhD (started in September 2019) I assess the protection level of MPAs globally and their potential socio-ecological benefits. I focus on a global assessment but I am very intrigued by the protection level of MPAs in specific sites, digging deeper into the circumstances that lead to ‘paper MPAs’ with minimal ecological and social benefits. This is how the idea of this project started. The project got a feasible-logistical shape when I met Azara Foundation who told me about the situation in San Antonio MPA. From this interaction, I met other institutions including the local University (Universidad del Comahue), with which I started to collaborate. The scientists at Comahue University were vital for the success of this project as they

were able to support with scientific literature the facts and the difficulties that the Foundation and the locals described to me.

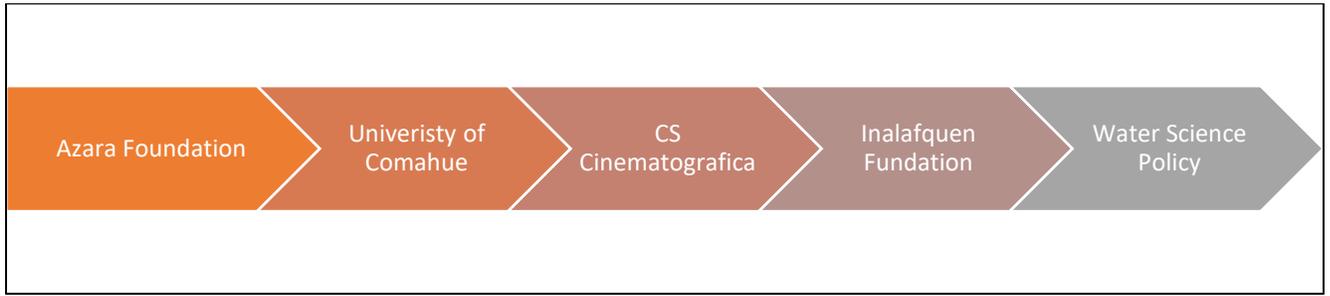


Figure 1. Scheme of the cooperative field venture between the rapporteur and locally based organization in San Antonio and worldwide (in grey, Water Science Policy). This also demonstrates the power of networking as the cooperative work that started with Azara Foundation allowed the continuity and the growth of trust with other local groups and agencies.

ACCOMPLISHMENTS

The achievements varied from the individual to the community level but can be resumed as shown in figure 2.

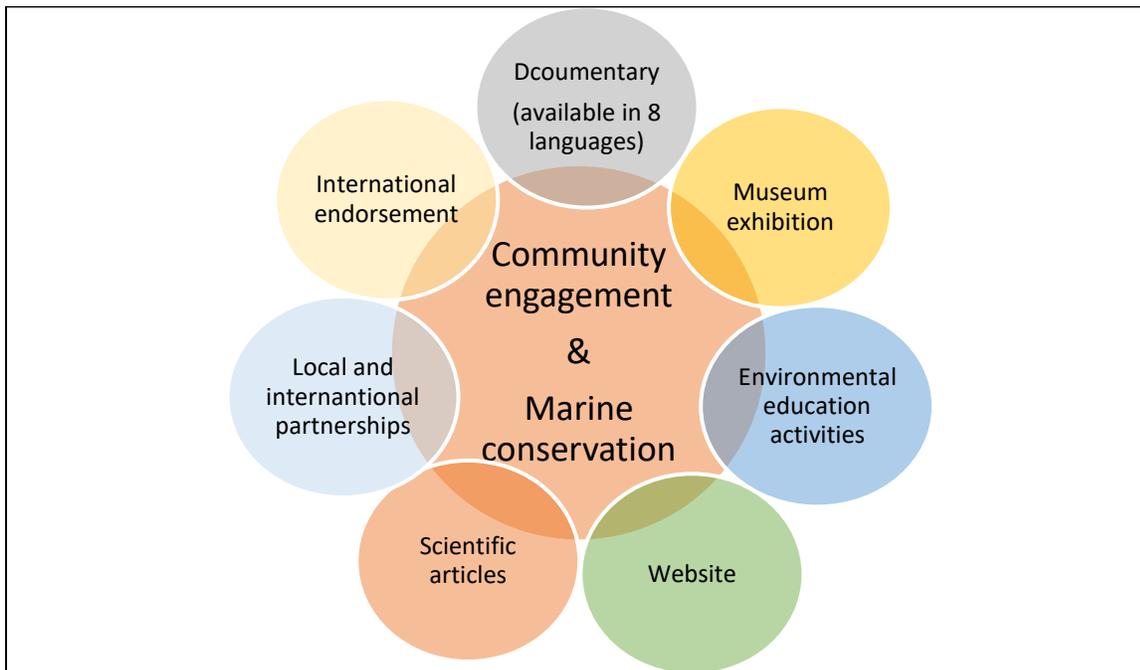


Figure 2. The main accomplishments (small circles) helped to reach one of the main outcomes of this project: community engagement and better marine conservation in the MPA of San Antonio Bay (Argentina).

Pictures during the fieldwork can be found in the annex and these are an example of the collaboration process, the community engagement and the good acceptance of this project and initiative.

Thanks to the support of the Robin Rigby Trust Scholarship, I was able to plan, lead and complete the following activities:

➤ PRODUCING A DOCUMENTARY (trailer and version 44 min and 30 min):

A vast amount of work had to be undertaken before the fieldwork took place. This included: researching and assessing different areas' social-ecological statuses to identify a suitable study site; building partnerships with local institutions, governments and stakeholders, organising and managing a local and international team of research assistants, film producers and graphic designers, and creating a logo for the project which was used for advertisement, social media, merchandising, events and the documentary itself.

A large part of the fieldwork involved filming and producing the documentary. Many different stakeholders from a variety of sectors were interviewed and filmed (industrial and artisanal fishers, tourism industry, chemical industry, civil servants, researchers, NGO staff and other local people). Using the information gathered from the interviews, a storyline and consequent narration of the documentary were able to be developed. All of the audiovisual data then had to be edited to make a coherent documentary which adequately and appropriately told the story of the MPA and its residents.

Other activities were also taking place during the fieldwork. For instance, 'movie night' events, where the documentary was shown were run in different locations in the MPA proximities. These events were filled with activities, including environmental education games for children, concerts, raffles of native plants, photocalls, art expositions, capacity building and roundtable questions. A museum exhibition was also curated, and children's educational activities and cultural competitions for local residents ran throughout the project (more details below and in the annex). Advertising and promoting this work through local radio, newspapers, television and posters were a key aspect of informing people of these activities.

The documentary just finished its post-production stage. It is translated into seven languages: English, French, Italian, German, Portuguese, Hindi and Arabic.

➤ MUSEUM EXHIBITION:

El Pueblo es el Mar is in the process of curating an exhibition in a local museum situated in the MPA, which includes an informative poster, tablet and opinion board. The tablet offers an interactive journey through MPA where visitors can explore the fauna, flora, landscapes and local perspectives of the area using clips of the stakeholder interviews. The opinion board consists of a game where the visitors write down their answers to the question "what does the Bahia of San Antonio [the MPA] mean to you?" inside of a fake mussel and pin it to a wall. While this seems simple, it is in itself another manner of gathering anonymous data on local communities' opinions of the MPA. The poster is in progress (the illustrations have been completed by a local artist), and the tablet and opinion board are currently being finalized.

The informative poster for the exhibition will be supervised and assessed by specialists during the ComSciConCAN Conference in Toronto (August 2022), which is Canada's first national science communication workshop for graduate students. They will help me enrich and perfect the exhibition materials for the museum of San Antonio.

- ENVIRONMENTAL EDUCATION ACTIVITIES (3-12 years old) and CULTURAL CONTESTS (for residents of all ages):

These initiatives aimed to encourage children and residents to ponder over the importance of their MPA and ocean conservation, and to then express their views through various art forms. There were three different contest categories within this: a drawing competition (4-11 years), a photography competition (12-23 years) and a poetry competition (24+ years). Over fifty entries were submitted overall, and six prizes were given to the winners during the movie night events. Running these competitions, including the prize-giving aspects, involved organizing logistics, materials, volunteers and advertising.

- WEBSITE of the Project:

The project's website [El Pueblo Es El Mar](http://www.elpuebloeselmar.com), available in both English and Spanish, was designed and built in partnership with Water Science Policy, an NGO specializing in water-related science communication. Its intuitive and visually attractive format is engaging and clearly communicates the objectives and results of the project. Visit it at: www.elpuebloeselmar.com

- PEER-REVIEWED JOURNAL ARTICLES:

An article entitled "Emphasize co-design to establish well-managed Marine Protected Areas (Relano, Harrigan and Fischer)" was submitted to ICES Journal of Marine Sciences, on March 22 (under full consideration). A second academic paper will be submitted by the end of 2022 with co-authors of the University of Comahue and the Inalafquen Foundation.

- HIGH-INTERNATIONAL PARTNERSHIPS:

Apart from engaging and collaborating with local organizations and together working towards their conservation objectives, I have also had the opportunity to engage in a partnership with Marine Life 2030, a UN Ocean Decade Program. In doing so, I am able to receive extra support and have access to an international network of specialists. This is highly valuable as I plan to repeat the El Pueblo es el Mar documentary series in more locations across the world, preferably in every ocean basin over the next 10 years. The ability to liaise with Marine Life 2030's global network of experts means that more knowledge and contacts will be available, and so the projects will be more effective in reaching more communities. The next potential places will be the Salish Sea (British Columbia, Canada), San Miguel de Cozumel Island (Mexico), the Philippines and Sri Lanka.

A management structure and protocol were developed from this project which served as a pilot for the project that I submitted to the UN Ocean Decade and that intends to collaborate and assess one 'paper MPA' per ocean basin within the next decade (see figure 3).

| | |
|--|--|
| WG 1 | Research |
| • Select which MPAs could be examined; conduct research on the chosen case studies; ensure that methodologies match the needs of each study site | |
| WG 2 | Writing and Editing |
| • Produce content for different deliverables, including script, websites, posters and educational activities | |
| WG 3 | Cinematography |
| • Film the interviews and other content as needed; edit the audio-visual material; produce the final documentary and other videos as needed | |
| WG 4 | Translations |
| • Including the documentary subtitles and related articles. WG4 will work in collaboration with Water Science Policy | |
| WG 5 | Communication |
| • Conduct outreach activities; promote knowledge; handle social media pages; coordinate with local bulletins and communication channels | |
| WG 6 | Partnerships and Resources Mobilisation |
| • Connect and coordinate with local organisations; network on a global scale with other marine conservation organisations | |

Figure 3. Different members of the team will go to case study sites (the selected ‘paper MPAs’) as necessary and locals will play an essential role. There are six main Working Groups (WG) and their main responsibility is described.

COOPERATION & LINKAGES

This project has already proven to be successful, communicating and collaborating with the locals, as well as improving the coastal area of San Antonio bay. In January and February 2022, fieldwork took place in an MPA found in Patagonian Argentina. An innovative documentary was produced (see here [trailer](#)), a website was created with data and audiovisual material, and environmental education activities took place in various locations.

Positive impacts of this project include:

- Local government taking action to improve the waste collection system in the area.
- An independent investigation is to be conducted on the chemical plant situated in the MPA.
- Empowerment of the coastal MPA community to recognise environmental issues and solutions.
- Increased awareness among and between stakeholders of needs, worries and relationships.
- Capacity building to allow stakeholders to advocate for conservation and inclusive, sustainable economies.

For me this research was and is:

- A unique, multicultural experience and knowledge exchange.
- A chance to apply and perfect the methodology I developed.
- An exceptional way to improve locals' lives and collaborate with well-established organizations.
- An opportunity for change among leaders and locals.

For the community and my partners this research:

- Raises awareness among the different stakeholders' needs, participation, worries and relationships.
- Brings a refreshing point of view to allow them to advocate for conservation and inclusive-sustainable economies.
- Empowers the San Antonio MPA community with instruments of action to implement a precise management plan.
- Eventually leads to more informed policy-making with a real impact on the community and the marine ecosystem.

FUTURE PATHS & REPLICATION

The project of 'Socio-ecological management in the San Antonio Bay MPA' is driven by the fact that a peer-reviewed paper would be of little help to the social and environmental challenges of San Antonio MPA. The questions for me were "How to start a conversation?" and "How to raise awareness among stakeholders that the inadequate management of the area is incurring big ecological and social costs?". This is why next to new knowledge generated through research and stakeholder interviews (fishers, industry, tourism, neighbors, NGOs, managers), the project's main outcome is a documentary for adults and kids. This audiovisual of ca. 40 min is a starting point for a conversation among the local stakeholders and a change in San Antonio.

Apart from turning the data into an attractive documentary, results and audiovisual material were shared via a dedicated website, where people can explore San Antonio MPA's challenges. The documentary was part of a mobile exposition that toured social centers around this MPA and it will continue touring in different international film festivals, scientific conferences and community-led theatres. In San Antonio the movie night event served as an introduction to the local marine ecology through games and small activities for children, competitions, and concerts and created an interest for the MPA and an early sense of responsibility to protect their marine ecosystems. At an international level, the movie brings awareness to the situation in which other coastal communities are living. Many actors will have the opportunity to relate to the experiences and challenges of the community in San Antonio. This will bring everyone closer to the reality of 'paper MPAs' and help find more integrated solutions in MPAs and in communities that experience similar challenges.

The documentary “El Pueblo es El Mar” (the People are the Sea) was selected for the *Latino and Native American Film Festival 2022*, and it was awarded the Best Documentary 2022 at the *Mannheim Arts and Film Festival*. The next confirmed places where “El Pueblo es El Mar” will be streamed are: The Ecological Society of America (ESA) Annual Meeting (Montreal, Canada, August 2022), MER Summit Conference (Bilbao, Spain, September 2022), Public Scholars Event (VanDusen Botanical Garden, Vancouver, October 2022), Scientific Series (UBC, Vancouver, November 2022), Anker kino (Burghausen, Germany, December 2022), Teatro Moderno (Guadalajara, Spain, January 2023), Engineers Society (Guadalajara, Spain, January 2023) and IMPAC 5 (Vancouver, Canada, February 2023).

The project partially funded by the Robin Rigby Trust served as a pilot study that led to a large-scale project, called SOS Somos **O**ceano**S** (ocean stories for conservation), which was recently endorsed by the UN Ocean Decade and will be replicated in at least one MPA per ocean basin within the next 10 years. The project SOS looks to promote the perspectives of communities on marine management and raises awareness of the ecological, social and economic value of various Marine Protected Areas (MPAs) across the world through accessible science communication. SOS is a holistic project that will work with three different Ocean Decade programmes, *Marine Life2030*, the *Early Career Ocean Professionals* and *Empowering Women*. The project will deliver transboundary and transdisciplinary ecosystem knowledge in places identified as ‘paper MPAs’ (Relano et al. forthcoming). SOS advocates for marine conservation, sustainable resource management and effective MPA governance through community engagement, science communication and knowledge sharing. A documentary for each study site will be produced highlighting local environmental challenges such as industrial pollution, mass tourism, loss of traditional knowledge, unregulated fishing and destructive extractive activities.

SOS is born thanks to the “Socio-ecological management in the San Antonio Bay MPA, Argentina” and has the following time structure:

- Stage 1 (Year 1 - 3) – Engagement and Assessment: Acquiring funds. Conduct the first site study under the Decade Action.
- Stage 2 (Year 3 - 9) – Implementation and Evaluation: Conduct further site visits across different basins. Main outcomes: Community engagement, series of documentaries and actions for more resilient marine and coastal environments.
- Stage 3 (Year 9 - 10) – Future Actions: Synthesis of completed work, including a ten-year report. Create an open-access online learning platform and evaluate the progress.

SUSTAINABILITY

Marine Protected Areas (MPAs) can play an important role in both mitigating and adapting to climate change and securing a sustainable future for the ocean and dependent human communities. That is why during my PhD under the supervision of Dr Daniel Pauly, I assess the protection level of MPAs globally and their potential socio-ecological benefits and study why some MPAs have very limited benefits to socio-ecological systems ('paper MPAs').

Ocean warming has already affected global fisheries and people in the past four decades, assessing 'paper MPAs', highlighting and communicating the immediate need to develop adaptation plans that include well-established and integrated MPAs is crucial to minimize the effect of this eminent warming on the economy and food security of coastal communities. This project could not have been possible without the Robin Rigby Trust, this financial support was more than that because it made it possible to show the importance of scientific communication in our fight against climate change and climate injustices that affect the local communities the most. The documentary here produced was found to be one of the most appropriate channels to raise marine conservation importance among a local and an international and well-respected community.



Figure 4. Manuela Suarez's drawing is one of the winners of the drawing competition for kids between 4 and 11 years old. This initiative drew attention to our project to a different public (kids and parents), who felt the urge to participate, to know more about what we were doing in the MPA and attend the movie night, where we gave the awards to winners of the drawing, photo and poetry competition.

SUMMARY OF THE FINANCES (CAD \$)

| | Robin Rigby Trust | Public Scholar UBC | Sea Around Us UBC | In-kind |
|----------------------------|-------------------|--------------------|-------------------|---------------|
| Staff cost | | | | |
| Assistants | 1,200 | | | 4,000 |
| Producers | 3,500 | | | |
| Accommodation | 1,000 | | | |
| Sustenance | 400 | | | 500 |
| Translators | | 2,124 | | 1,000 |
| Web designer | | 2,500 | | 600 |
| Graphic designer | | 1,450 | | 3,000 |
| PhD Researcher salary | | | 24,000 | |
| Supervisory support | | | 14,000 | |
| Insurance | | | 2,000 | |
| Subtotal | 6,100 | 6,074 | 40,000 | 7,100 |
| Travel cost | | | | |
| Air Travel | 2,375 | 525 | | 1200 |
| Visa and COVID tests | 600 | | | |
| Ground Transportation | 400 | | | 500 |
| Car expenses | 655 | | | |
| Subtotal | 4,030 | 525 | | 1,700 |
| Equipment | | | | |
| Hard Drives | | 250 | | |
| SD card | | 200 | | |
| Sim Cards/mobile | | 250 | | |
| Battery storage | | 201 | | |
| Drone | | | | 1,300 |
| Subtotal | | 901 | | 1,300 |
| Outreach activities | | | | |
| Community engagement | 2,295 | | | |
| International engagement | 575 | | | |
| Roundtables international | | | | 500 |
| Documentary streaming | | | | 400 |
| Peer-reviewed article(s) | | | 1,200 | |
| Subtotal | 2,870 | | 1,200 | 900 |
| Total | 13,000 | 7,500 | 41,200 | 11,000 |

ANNEX

DOCUMENTARY PRODUCTION





FLORA AND FAUNA



OUTREACH ACTIVITIES

Instagram: [elpuebloeselmar](#)
Facebook: [elpuebloeselmar](#)
Twitter: [Puebloeselmar](#)
Email: puebloeselmar@gmail.com

Visitanos a:
www.elpuebloeselmar.com



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MANDA TU POESIA Y CONSULTAS A PUEBLOESELMAR@GMAIL.COM O A NUESTRAS REDES @ELPUEBLOESELMAR







FIELDWORK TEAM



Thank you for making San Antonio a better place, its people say MUCHAS GRACIAS for your support.